UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,289	12/14/2001	Jane A. Blasi	08935-244001 / M-4961	2843

26161 7590 09/17/2003

FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER
YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/022,289	BLASI ET AL.	
	Examin r	Art Unit	
	Dah-Wei D. Yuan	1745	

-- The MAILING DATE of this c mmunication appears on the c ver she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) *1-18 and 37-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

ELECTROLYTE ADDITIVE FOR NON-AQUEOUS ELECTROCHEMICAL CELLS

Examiner: Yuan S.N. 10/022,289 Art Unit: 1745 September 9, 2003

Election/Restrictions

1. Applicant's election without traverse of Group I-3, claims 19-36, in Paper No. 7 is acknowledged. Claims 1-18,37-47 are withdrawn from consideration.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 19-30,33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Nimon et al. (US 6,165,644) as evidenced by Suslick et al. (US 2003/0143112 A1).

With respect to claim 19, Nimon et al. teach a lithium battery comprising a positive electrode, a negative electrode and an electrolyte. The positive electrode may be attached to a current collector by directly forming into the current collector or by pressing a preformed electrode onto the current collector. The current collectors are typically sheet of conductive material such as aluminum or stainless steel. In one embodiment, the battery includes a lithium electrode in an electrolyte solution containing lithium trifluoromethasulfonimide, sulfur as LiS_8

in tetraglyme and $Mg(ClO_4)_2$ (a perchlorate salt). Nimon et al. further disclose the lithium battery can be either a primary battery or a rechargeable battery. See Column 7, Lines 46-50; Column 8, Lines 42-46; Column 13, Lines 5-10.

With respect to claims 20,21, Nimon et al. teach the lithium battery can be a lithium (anode) – manganese oxide (cathode) primary battery. See Column 8, Lines 42-46.

With respect to claims 22-26, Nimon et al. teach the addition of perchlorate salts, such as $Mg(ClO_4)_2$, to the electrolyte. Typically, the concentrations of salts are found to be in the range from about 0.01 moles/liter to about 0.5 miles/liter. See Column 5, Lines 8-26. The electrolyte solvent of tetraglyme has a density of 1.009 g/cm^3 (see Suslick et al. US 2003/0143112 A1, Paragraph 307). It is calculated that the concentration of the magnesium perchlorate in the electrolyte is ranging from about 2200 to about 11,1000 ppm by weight.

With respect to claims 27-30, Nimon et al. teach the electrolyte salts for the battery include lithium perchlorate ($LiClO_4$). The perchlorate salt additives include transition or alkaline earth metals, which include Ca, Ba and Al. See Column 5, Lines 8-44; Column 10, Lines 13-24.

With respect to claim 33-36, Nimon et al. teach the optional electrolyte salts for the battery include lithium trifluoromethanesulfonimide, lithium triflate and lithium hexafluorophosphate ($LiPF_6$). The typical concentration of the lithium salt is 0.5 moles/liter, which is equivalent to 76,000 ppm when $LiPF_6$ is used.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 31,32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nimon et al. (US 6,165,644) as applied to claims 19-30,33,36 above, and further in view of Kitoh et al. (US 6,352,793 B2).

Nimon et al. disclose a primary electrochemical cell as described above in Paragraph 3. However, Nimon et al. do not disclose that the use of aluminum as the case material. Kitoh et al. teach the use of pure aluminum (melting point 660°C) as case for a lithium battery because it has light weight, excellent electron conductivity and good workability. See Column 2, Lines 15-25. Therefore, it would have been obvious to one of ordinary skill in the art to use aluminum case for the lithium battery of Nimon et al., because Kitoh et al. teach the use of aluminum battery case because of its light weight and excellent workability.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 19-36 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 12-24 of copending Application No. 10/361,945 (US 2003/0124421 a1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the steel current collector and the aluminum current collector can be used interchangeably as describe in Paragraph 3 above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (703) 308-0766. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Dah-Wei D. Yuan
September 10, 2003